LianTronics

Display All You Want !

LED Curtain Display C25

User Manual

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Changes

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1. SAFETY

This chapter contains important information to prevent personal injury and product damage when you install the display. Read this chapter and keep it properly. Ensure that you understand and follow all the safety instructions and warnings in this chapter before installing.

Personal Protection

	Warning: Ensure that you understand and follow all the safety instructions, warnings mentioned in this manual.
	Warning: Pay attention to electric shock.
	Warning: Wear a hard hat to reduce the risk of personal injury.
	Warning: Be aware of suspended loads.
	Warning: Mind your fingers while dealing with heavy loads.

Personnel of installation and maintenance

The installation and maintenance of this product must be performed by authorized and qualified technical personnel only. The manufacture dose not take responsibility for the results caused by incorrect, improper, irresponsible and unsafe actions.

GND and Lightning protection

Do not underestimate the safety protection of grounding plug/socket. If the supplied plug/socket is defective, replace the defective parts. Ground the product correctly to avoid electric shock caused by large electricity leakage.

Disconnect the power in the time of lightning, or provide other suitable lightning protection device. Disconnect the power plug when the product is not used in a long period.

Ambience of installation and use

- The ambient temperature for LED display: max 50°C, min -20°C.
- Ensure that the ventilation is good. Do not jam or drop metal particles and cable pieces into ventilation opening. Keep the ventilation surface clear without foreign matters like wrapping materials. False actions may lead to poor ventilation and cause fire, malfunction and error.
- Install LED display far away from radiator, heater, furnace and other equipments hindering ventilation and heat dissipation (including but not limited to amplifier, laser, ultrasonic vibration devices), flammable materials (like curtains) and other unsafe devices.
- I/O signal cables should be shielded to restrain the high-frequency interference.
- LED display can not contact with any corrosive and abrasive matter. Do not use LED display in moist ambience, in ambience containing airborne contaminant, dust, oily fume, corrosive gas and flammable gas, and in ambience with vibration and shock.

ESD and LED:

LED components are ESD (Electro-static Discharge) sensitive. Do not touch LED components when the display is in operation or switched off.

Disconnect device:

When the appliance inlets of the individual tiles are not accessible, the socket outlets supplying the rack shall be installed near the equipment and be easily accessible, or a readily accessible general disconnect device shall be incorporated in the fixed wiring.

Mounting parts:

The mounting parts are only used to install LED display. Do not repair or copy. Only use parts appointed by the manufacturer. Contact LIANTRONICS if you want customized application.

Product care:

Inspect all installations on a routine basis to check security, wear, deformation, corrosion or any other situation that reduces load-carrying capability. Increase inspection frequency for key parts. Keep structural and mounting parts dry, clean, lubricated (only if recommended), coated properly, and maintain complying with part design. Defective parts must be removed or replaced at once.

Installation and wiring:

Install the display and connect cables following the manual instructions. The installation and wiring must be secure. Poor connection may lead to malfunction. Do not step on power/data cable or squeeze plug, socket and power/data cable. Do not suspend any items on cables or the back of LED display. Connect or disconnect the cables of data communication, extension module or control unit after the power is off to prevent product damage or malfunction.

Risk of electric shock:

- To avoid electric shock and damage , do not dismantle the inside electrical parts.
- Do not hot plugging the cables to prevent electric shock or circuit damage.
- Keep clean after installing and cabling. Be ensure all the devices and terminals are covered before tune on the power.
- Do not touch the terminals when power is on. Clean and screw the terminals when power is off.

Moving or transporting product:

Do not hit the corners of LED tiles when installing or dismantling LED tiles. Be careful when moving or transporting the product to prevent any damage.

LED tiles can not be transported in containers other than LIANTRONICS flight cases or packaging. Even the use of LIANTRONICS packaging does not guarantee the LED tiles against damage due to excessive force of impacts. All warranty claims regarding damaged modules due to incorrect packing will be rendered invalid.

2. INSTALLATION REQUIREMENTS

This chapter specifies the requirements for safety, mechanism, electricity and control software of C25 LED display.

2.1 Mechanical Requirements

Warning: Do not underestimate the weight of a complete C25 LED display. Be sure that the floor or truss installation on which the C25 display has to be installed is capable of handling five (5) times the complete load of the display. For floor mounting, conclude the weight of any other load.

Caution: One C25 tile weighs approximately 14.5kg.

Horizontal surface

For floor installation, the floor on which C25 display is installed must be horizontal. Never install LED display on a slant surface.

Ballast

Depending on the height of the display and the position of the LED display upon the foot beams (somewhere between front and middle) , additional weight (ballast) will be required. Consult professionals of LIANTRONICS to calculate the minimum ballast you require for safe installation of the LED display.

Truss beam

The truss beam has to be provided and installed by the customer. Pay attention to following points for installation design and preparation. Calculate precisely for on individual basis.

Weight tolerances: Ensure that the truss beam and the ceiling against which the truss beam has to be installed is able to handle the complete weight of the C25 LED display.

Ceiling stability.

Installation ambience.

Environmental conditions: humidity, ventilation, temperature, etc.

Location: Altitude, etc.

Front clearances: for optimal effect, ensure that enough free space is supplied in front of the LED display and respect the minimum viewing distance.

Comply with local regulations regarding such installations.

2.2 Electrical Requirements

Power requirements

The displaying area of one C25 tile is 0.64 m². The maximum power consumption of the C25 is 525W/m². For protect every power cable by a circuit breaker or fuses rated 16 A / 250 VAC (15 A / 110 VAC in the USA and Canada). LIANTRONICS provides a range of power distributor to satisfy the demands of your LED display. See more details for power distributor of LED display in Power Distribution Section. Contact LIANTRONICS for more information.

Power system

It is recommended to use power distribution system with a separate neutral and grounding conductor to avoid large current loops due to voltage differences in the neutral conductor.

Protect the electrical installation by switch, circuit breaker, over-voltage protector, defective-grounding circuit breaker with proper rated power.

Install the display in accordance with local electrical installation standards. In Europe, comply with EN 60364, the standard for electrical installation of buildings. In Germany, comply with EN 60364. In America, comply with National Electrical Code ANSI/NFPA 70.

Protective grounding

To prevent against the risk of electric shock, the installation should be properly grounded. Defeating the purpose of grounding will expose you to the risk of electric shock.

2.3 System Requirements

Before you begin, it is assumed that you are familiar with the Windows operating software. The CD-ROM in your package contains a Windows 7-based installation program. You can install the software from the CD-ROM.

System requirements

Minimum specifications:

- Hardware
  - PC Pentium IV 2.0 GHz or equivalent
  - 1 GB RAM
  - Free hard disk space: 10GB
  - XGA resolution (1024 x 768)
  - Serial communication port
  - Ethernet connection
- Software
  - Windows 7 Professional

Recommended specifications:

- Hardware
  - PC Intel i5 processor or above
  - 4GB RAM
  - Free hard disk space: 500 GB
  - SXGA resolution (1280 x 1024), with 512MB video memory
  - Serial communication port
  - Ethernet connection
- Software
  - Windows 7 Professional

3. SYSTEM INTRODUCTION

3.1 Brief Introduction

C25 series is a new type display with light weight, thin structure, and easy installation. It is made according to modern building needs and characteristics of stage lighting design and combines LED display technology, professional design and manufacturing. It is suitable for media applications of the building surface, and the stage area such as the large video display.

3.1.1 Key Benefits

- Easy maintenance.
- Adjustable transparent rate and contrast ratio.
- Low power consumption achieved by using intelligent temperature sensor.
- Strong weather-resistant capability.
- High protection grade.

3.2 System Components

C25 series LED display system includes the following basic components:

- **LED Display:** C25 series LED display tiles, power supply cables, signal cables, connectors
- **Control System:** control computer, LED display controller, distributor, control system software
- **Power Distribution System:** power distribution box, power cables
- **Peripheral Devices:** video processor, optical fiber transmitter

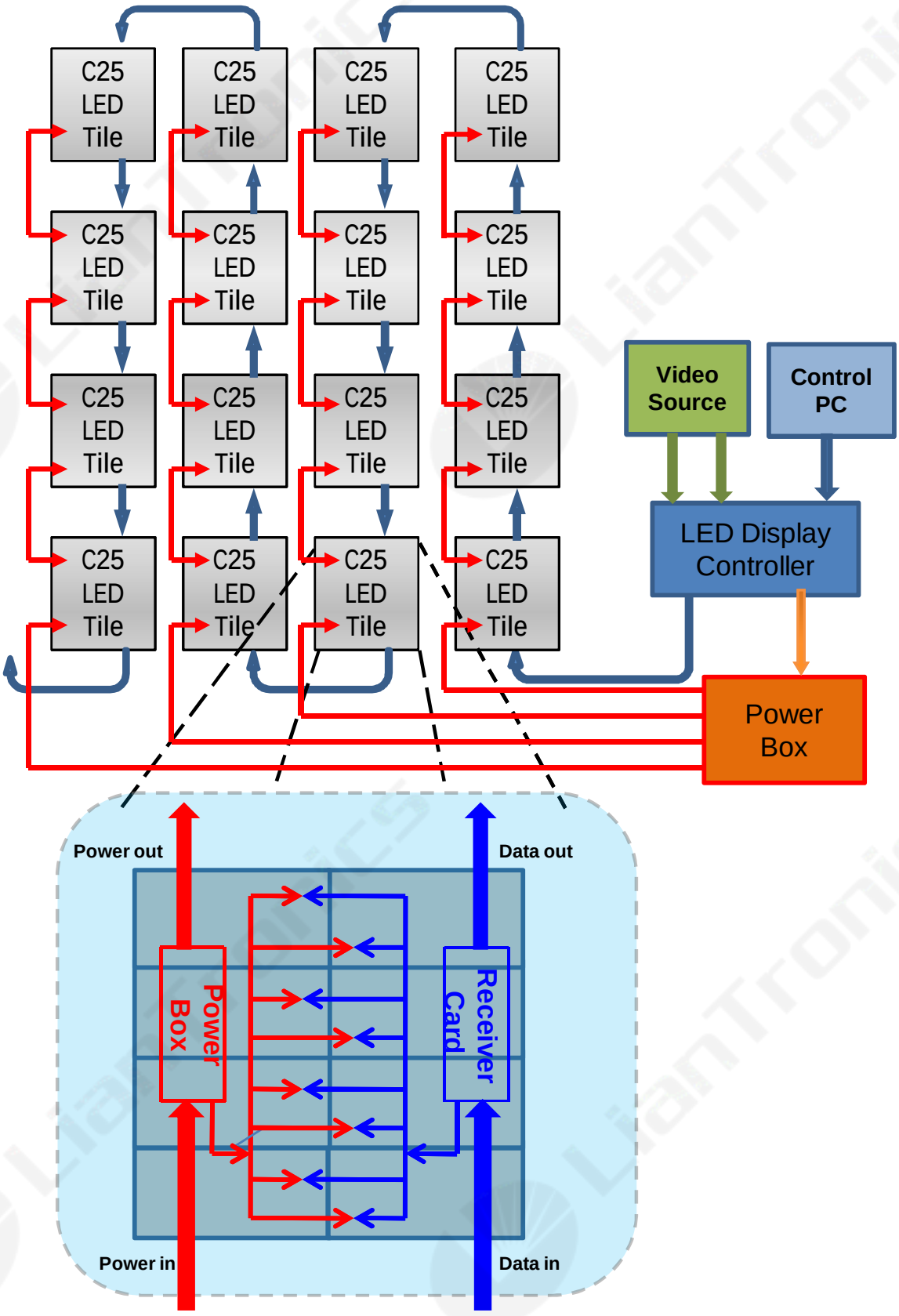


Image 3-1 Block diagram of C25 LED display system

LED Display Components List

Number	Name	Function /Explanation
LED Display Components		
1	C25 series display tile	Tile size: 800mm X 800mm, Weight: 14.5 kg
2	Power cable hole	Used for power input and output;
3	RJ45 signal cable hole	Used for data link between tiles;
Control System Components		
1	LED display control computer	Industrial control computer
2	Controller	Convert and send video signal
3	Distributor	Distribute the data signal to different tiles
4	DVI output graphics card	Support the output of multiple screens
5	Light sensor	Adjust brightness automatically according to the environment brightness
6	Receiver card	One card for one tile
7	Power management board	Support remote power supply
8	LED control system software	1.Control, set and play video list on LED display 2.Support calibration on-site 3.Support manual and automatic brightness adjustment 4.Support turning on/off LED display through remote network
Power Distribution System Components		
1	Power distribution cabinet	Support remote control power supply
2	Power distribution box	Support remote control power supply
3	Lightning arrester	International brand, to avoid lightning
4	Power cable	Comply with international standards
Peripheral Devices		
1	Video processor	Different models of Voao or Magnimage are available.
2	Optical fiber transmitter	Both single mode and multiple modes optical fiber transmitter can be used; multiple modes transmitter for 500M, and single mode transmitter for 20KM.
3	Optical fiber	8 cores optical fiber with premium brand
4	Heat sink devices	Axial flow fan can be chosen according to the heat dissipation space and the environment temperature.

Warning: LED display modules can be easily damaged, so the original packing materials are needed for the maintenance of the display modules. All the warranty claims are invalid for the damage caused by wrong package.

3.3 LED Display Components

C25 Tile

C25 series LED display is built with C25 tiles. A tile consists of iron frames, C25 display strip modules, power supply, receiver cards, and some other mechanical and electrical connection parts.

The introduction of the main components of C25 tile is shown as below with related images.

3.3.1 Frame

Each frame is installed with eight C25 display modules. There are LED signal receiver card and low voltage DC switching power supply inside the frame, and they all have electrical connection with 8 C25 display modules. There are special designs for fixing and connecting the tiles at each side of the frame. The frame has attachment points at the back and four corners. The attachment points are to fix the tiles to the supports like steel structures and buildings.

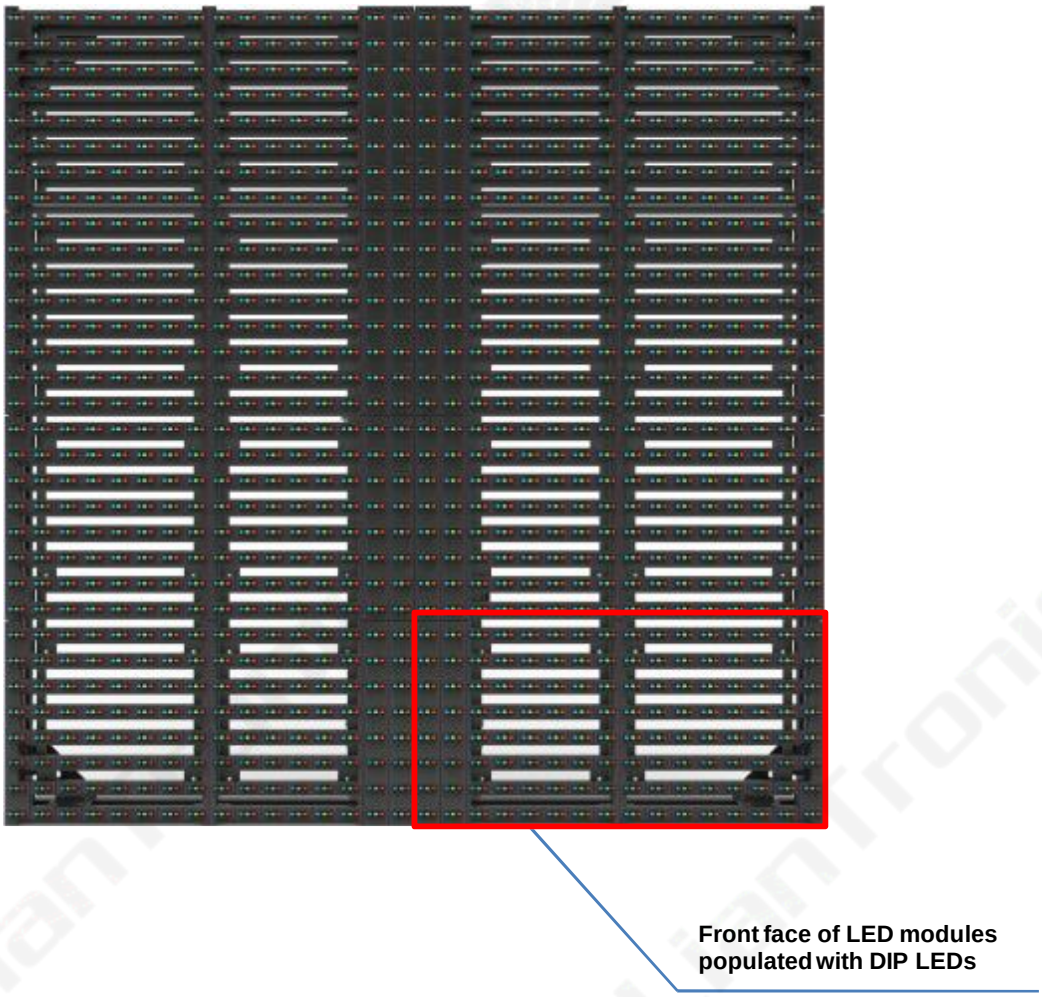


Image 3-2 The front face of C25 display tile

1. C25 tile has 8 grids for 8 modules to be fixed in. Each grid has 8 screw holes to fix one module. The precise positioning of the screw holes ensures the precise positioning of all modules. Keep screw holes clean to achieve smooth installation of the modules and avoid seams between tiles and uneven pixel pitches. There are also materials for eliminating the seam between tiles to ensure the smooth and uniformity of the whole display.
2. There are 4 power/data cable holes at the back of each C25 tile. Two of them are for power/data cable input, and the others are for power/data cable output.
3. Each of the four corners at the back of C25 frame has a fixed screw hole to support the installation.

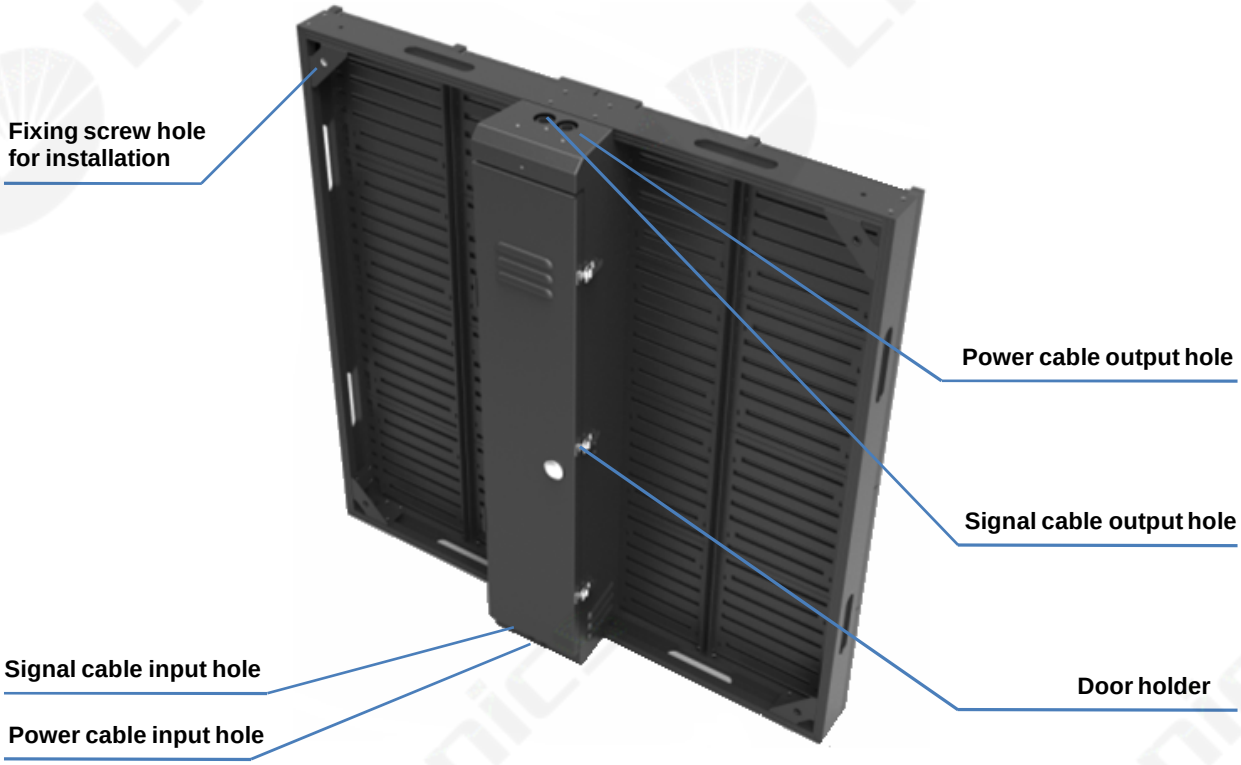


Image 3-3 The rear view of C25 display tile

3.3.2 C25 Module

C25 module includes plastic base frame, PCBA, plastic mask, etc. There are screw holes between the LED light bar in front of each C25 module. The LED lamp array lies in front of PCBA. Over the lamps, replaceable masks are equipped to protect the LED lamps and PCB and increase the light efficiency of the display.

Warning: C25 frame can only install C25 display modules.

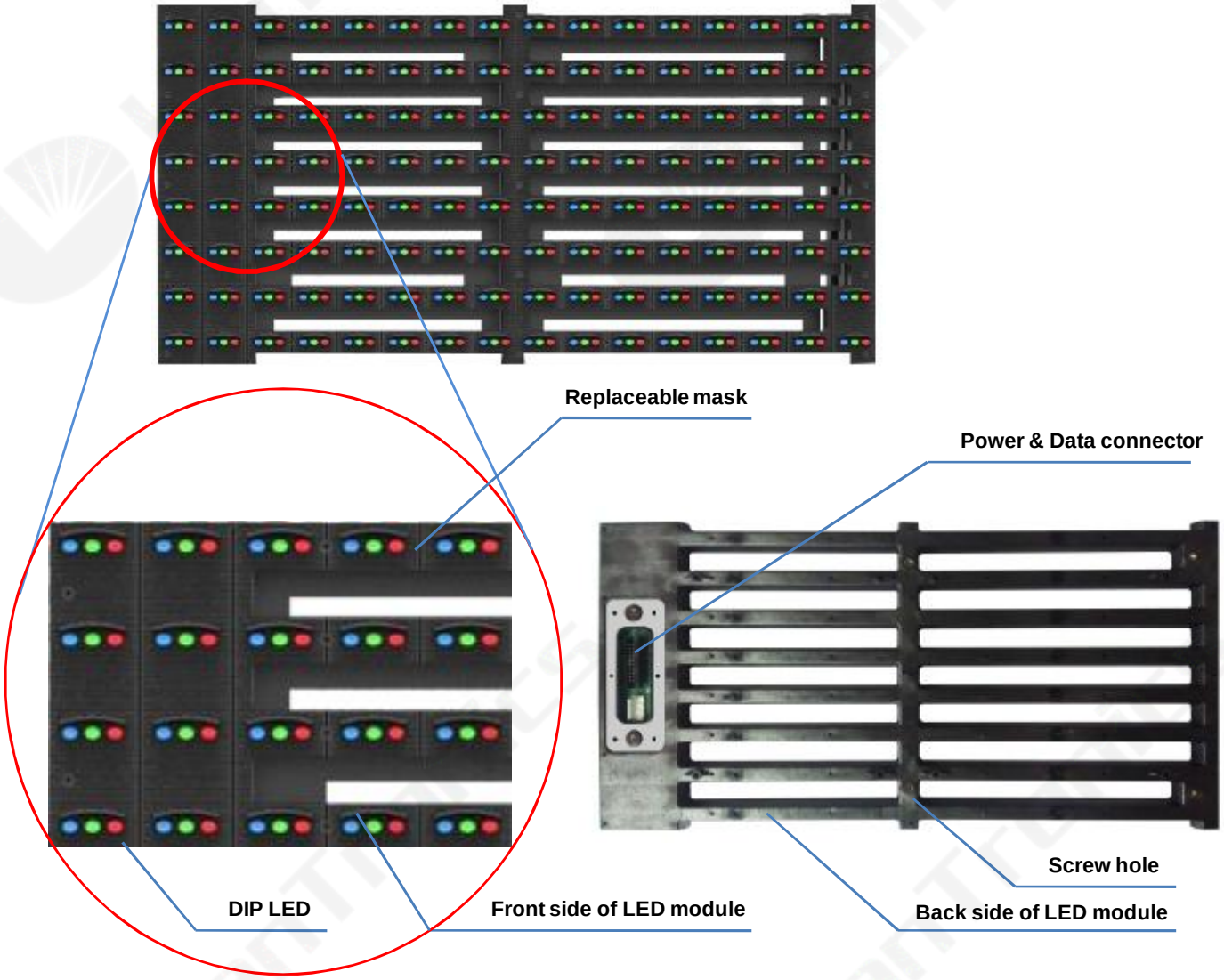


Image 3-4 The components of C25 display module

3.3.3 Power and Data Connection

Power cables are employed to connect upper and lower panels in series, and RJ45 signal cables are used to connect panels in loop.
Each C25 tile has one MRV220 receiver card for receiving and transmitting the data of LED display. The functions of the MRV220 receiver card are shown as below:

- Power supply: 3.3 - 5.0V
- Temperature monitoring (standard feature)
- Power supply voltage monitoring (standard feature)
- Working status monitoring (standard feature)
- 16 RGB data groups output (it can be extended to 32 groups.)
- Load capacity of single receiver card up to 256×128
- Support pixel level brightness/color calibration

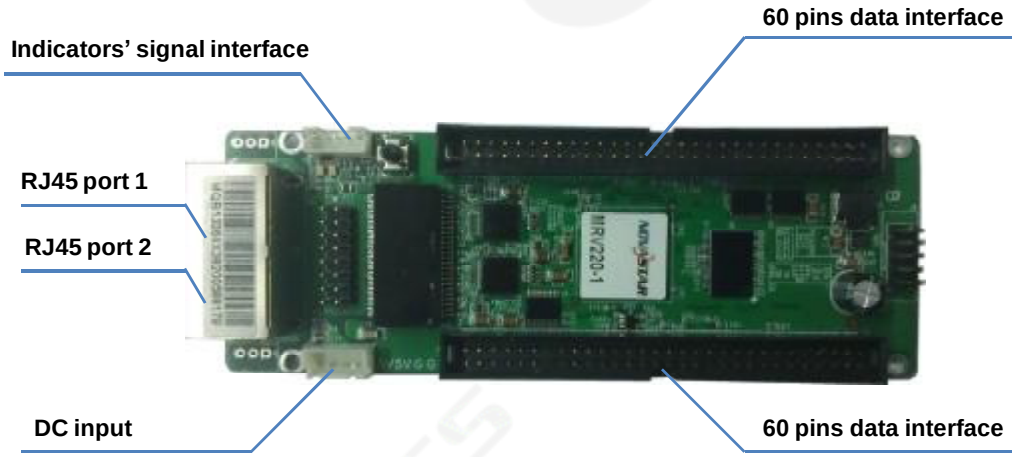


Image 3-5 MRV220 receiver card

3.4 LED Control System

This chapter introduces the control system and software of IR500 series display.

3.4.1 MCTRL300 Controller

MCTRL300 is LED controller with autonomous power supply. The main functions are shown as below:

1. DVI interface for video input
2. USB interface for instruction communication
3. Resolutions supported: 1024×1200,1280×1024,1600×848,1920×712,2048×668
4. Two serial interfaces
5. Light sensor interface integrated
6. Audio input interface integrated

Image 3-6 MCTRL300 controller

3.4.2 MSD300 Transmitter Card

1.DVI interface for video input

2.USB interface for instruction communication

3.Audio input interface

4.Resolutions supported:1024*1200, 1280*1024, 1600*848, 1920*712, 2048*640

Caution: A multifunction card is required for audio output.

Image 3-7 MSD300 sending card

3.4.3 MCTRLIR500 Controller

1.Two DVI interfaces for cascade (video input and output)

2.Audio input interface

3.Optional data output interfaces (4 RJ45 Ethernet ports or 4 optical fiber ports) to scan boards (receiver cards)

4.RS232 serial ports for cascading instruction communication

5.Maximum load capacity: 1920×1200

Image 3-8 MCTRLIR500 controller

3.4.4 MFN300 Multifunctional Card

1.RJ45 ports for connection with receiver cards

2.serial ports for connection with the control computer

3.Support 8 power supply control

4.Support light sensors

5.Support temperature and humidity monitoring

6.Audio input interface

Caution: The best connect position of function card should be between sending card and the first receiving card， either terminal or socket can be chosen for DC input.

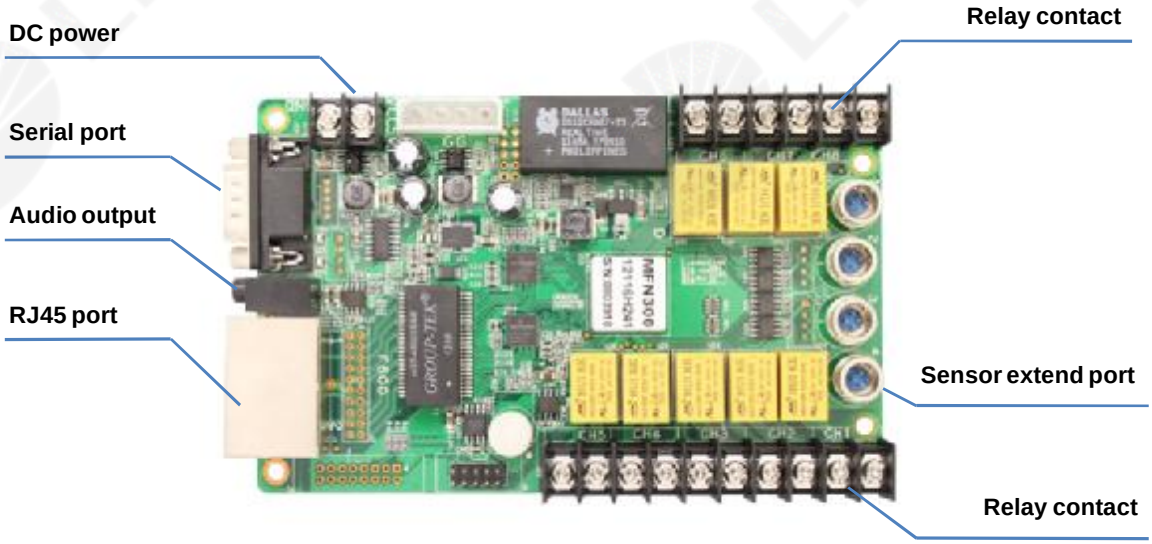


Image 3-9 MFN300 multi-function card

3.4.5 NS048C Light Sensor

1.For environment brightness monitoring

2.Connect to controllers(MSD300, MCTRL300) or multifunction cards (MFN300)

3.The cable of standard configuration is 5 meters. With a special ordered cable, the working distance can be extended up to 100 meters.

Image 3-10 NS048C light sensor

Note: Consult the controller manual for more information about installation and usage guidelines.

3.5 LED System Control Software

NovaLCT-Mars control software is used to configure and control LED display through PC. Software ware interface as follow：

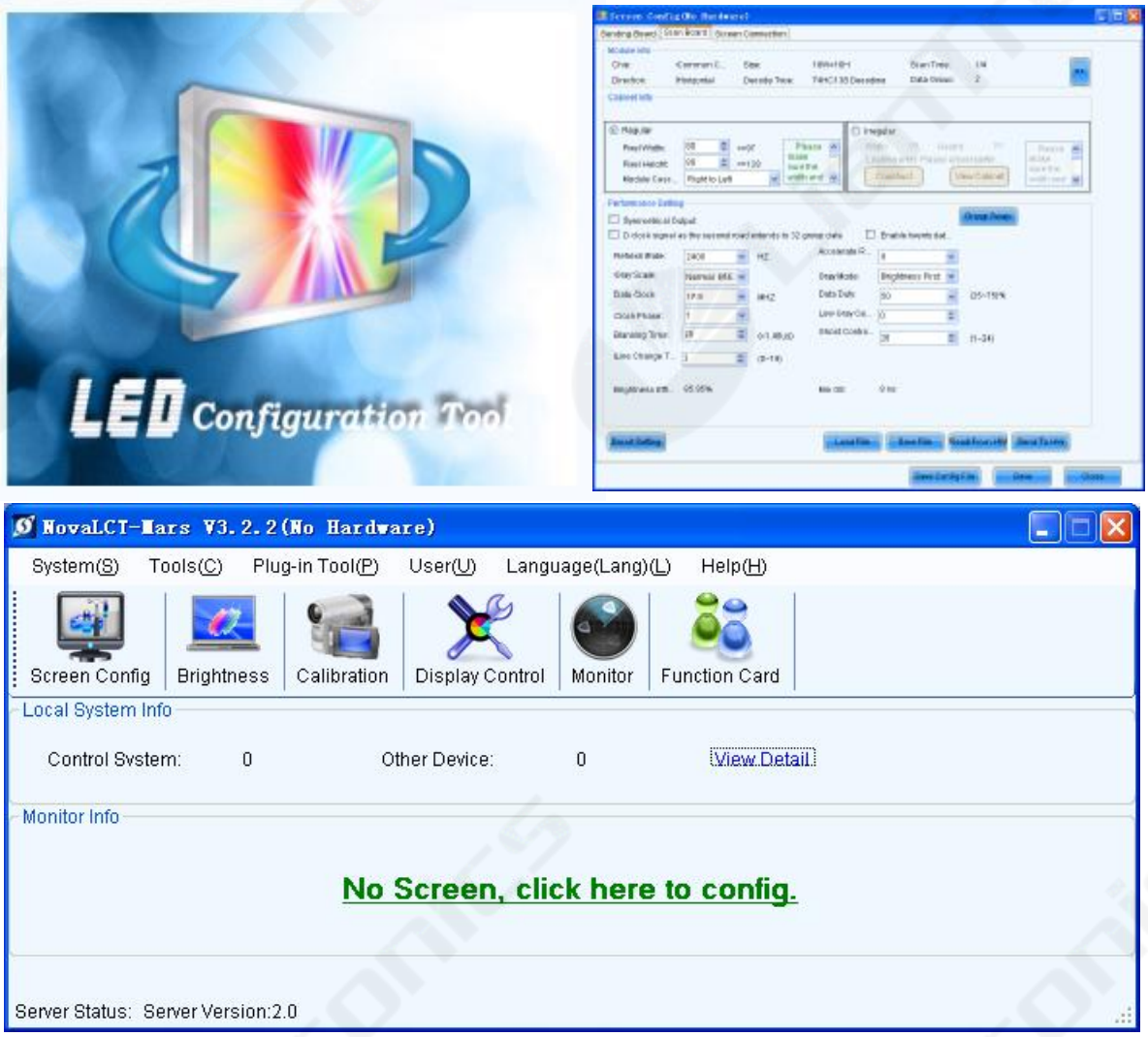


Image 3-11 NovaLCT-Mars control software interface

Note: For more information about installation and instruction of control software, consult *Nova LED Display Control System –Mars 3 User Manual.*

3.6 Peripheral Device

M3 CVT310/CVT320 (EO converter)

When the distance between LED display and the controller is beyond 100 meters, optical converter is needed to ensure the stable signal transmit and high quality. LIANTRONICS offers two complete solutions of optical fiber transmission including transmitter, receiver and optical fiber. Your choice depends on the required cable length.

Main Features:

•Use optical fiber of multimode, double cores and LC interface. Transmission distance up to 300m.

•One RJ45 Ethernet port for data input

•Power supply: 100 - 240V AC

•Use in pair.

Image 3-12 LC-LC fiber cable

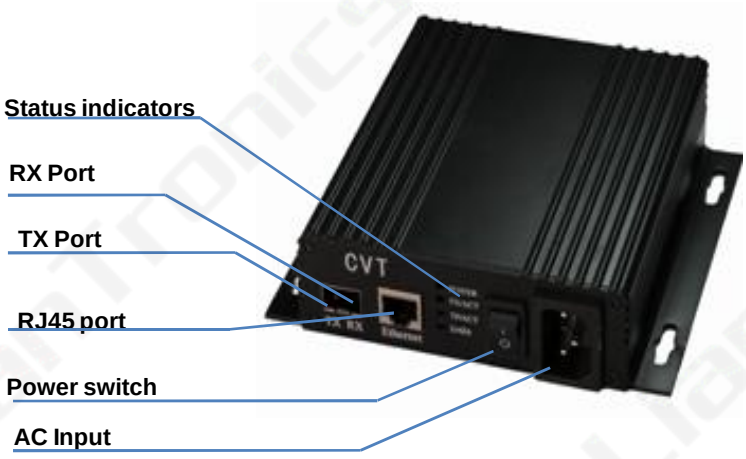


Image 3-13 CVT 310 transmitter, receiver and optical fiber

Note: Consult control system manual for more information about installation and usage guidelines.

Video Processor

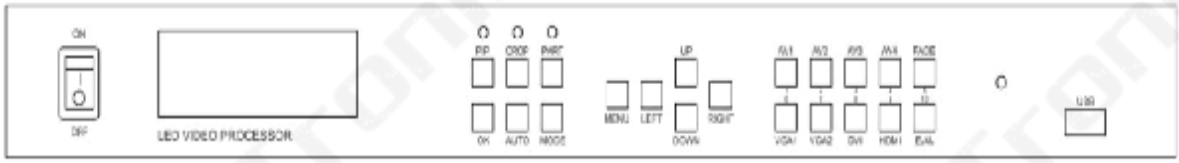


Image 3-14 Video processor front view

Menu Key Functions			
PIP	Picture in picture function key	1/AV1	Numerical1/select AV1
CROP	Picture cropping key	2/AV2	Numerical2/select AV2
PART	Partial/Full display switch	3/AV3	Numerical3/select AV3
OK	Confirmation key	4/AV4	Numerical4/select AV4
AUTO	Automatic pixel location alignment key	5/FADE	Numerical5/fading transition
MODE	Preset mode call-out	6/VGA1	Numerical6/select VGA1
MENU	Main menu key, or up to previous key	7/VGA2	Numerical7/selectVGA2
LEFT	Moving cursor to left	8/DVI	Numerical8/select DVI
UP	Moving cursor to top	9/HDMI	Numerical9/select HDMI
DOWM	Moving cursor to bottom	10/E.M.	Numerical10
RIGHT	Moving cursor to right		

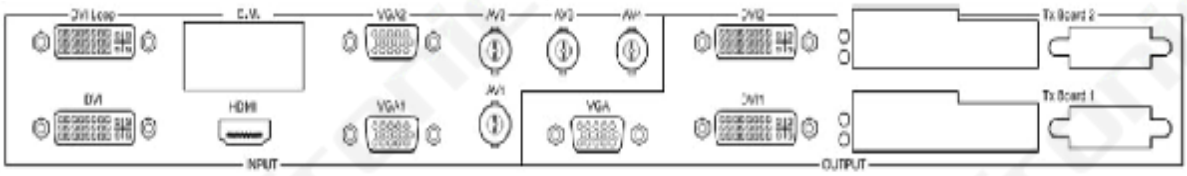


Image 3-15 Video processor rear side

Video Inputs		Video Outputs	
AV1~AV4	4 video inputs	DVI1~DVI2	2 DVI outputs (DVI-D single link)
VGA1~VGA2	2 VGA inputs	VGA	1 VGA output
DVI	1DVI input (DVI-D single link)	DVI Loop	1DVI loop output
HDMI	1 HDMI input	Tx Board1/ Tx Board2	Slots for 2 Tx Boards
E.M.	Extension module		

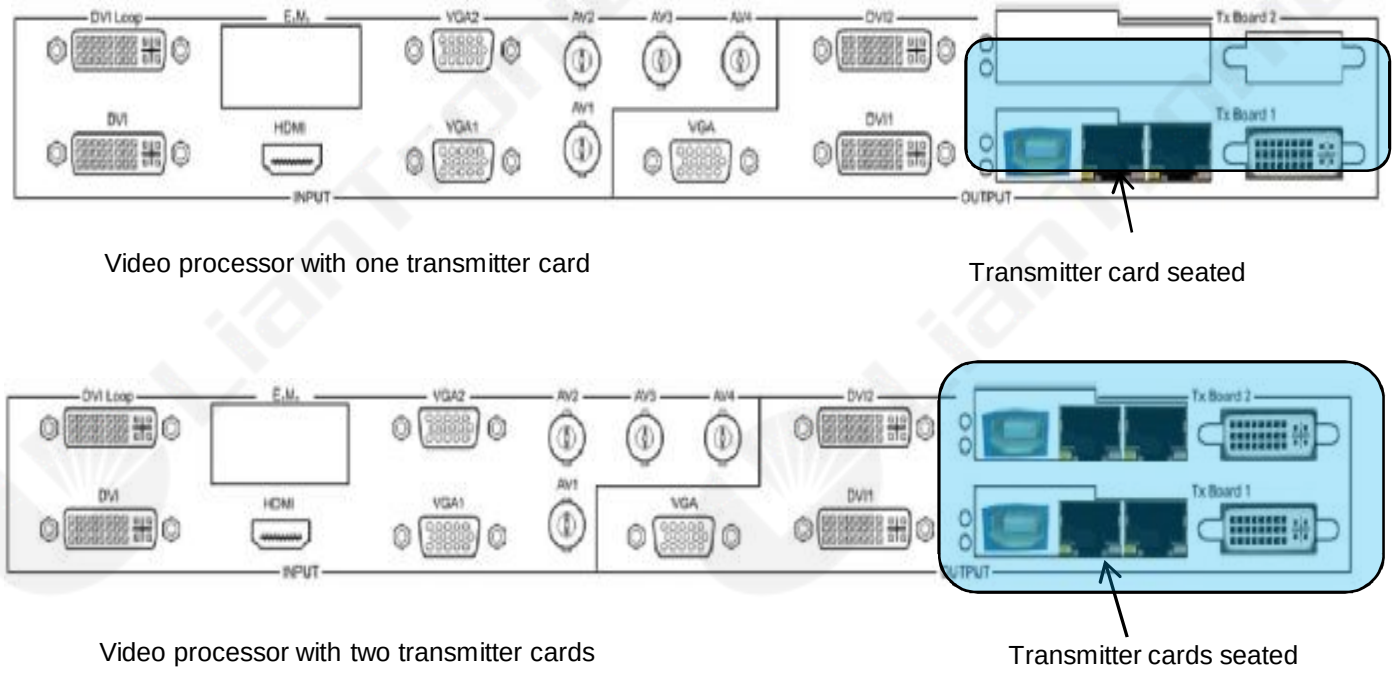


Image 3-16 Video processor with sending card installed

Image 3-17 Video processor with sending card installed

3.7 Power Distribution System

Power Distribution Tile

The use of proper AC distribution system is necessary to make sure the safe operation to C25 LED display. Although the third party solution is available, LIANTRONICS offers power distribution solutions with various sizes and types. As for the small system, “single-phase power box” can be used, while for the medium system, each of the custom power boxes solutions can be used.

Image 3-18 Single-phase power box

Image 3-19 Three-phase power cabinet

Note: Consult the power box manual for more information about installation and usage guidelines.

Power Supply Location

Install power distribution cabinet in the control room outside of the display structure. Install a control box inside the display structure, which can control the display power supply independently, and control the maintenance of sockets and the lighting equipment. If it is 3-phase power supply, each phase should bear equally.

Power Distribution System

The power distribution cabinet has air switch, leakage protection switch, fuses, AC contactors, power lightning arrester. The door of the cabinet is also equipped with current-voltage testing meters, knob switches and signal lights. The distribution cabinet has protection of lightning, overvoltage, overcurrent, undervoltage, short circuit, open circuit and leakage. The main switches in the power distribution cabinet are made of the Schneider devices and all other accessories and wires has "CCC" certification.

3-Phase 5-Wire Power Line

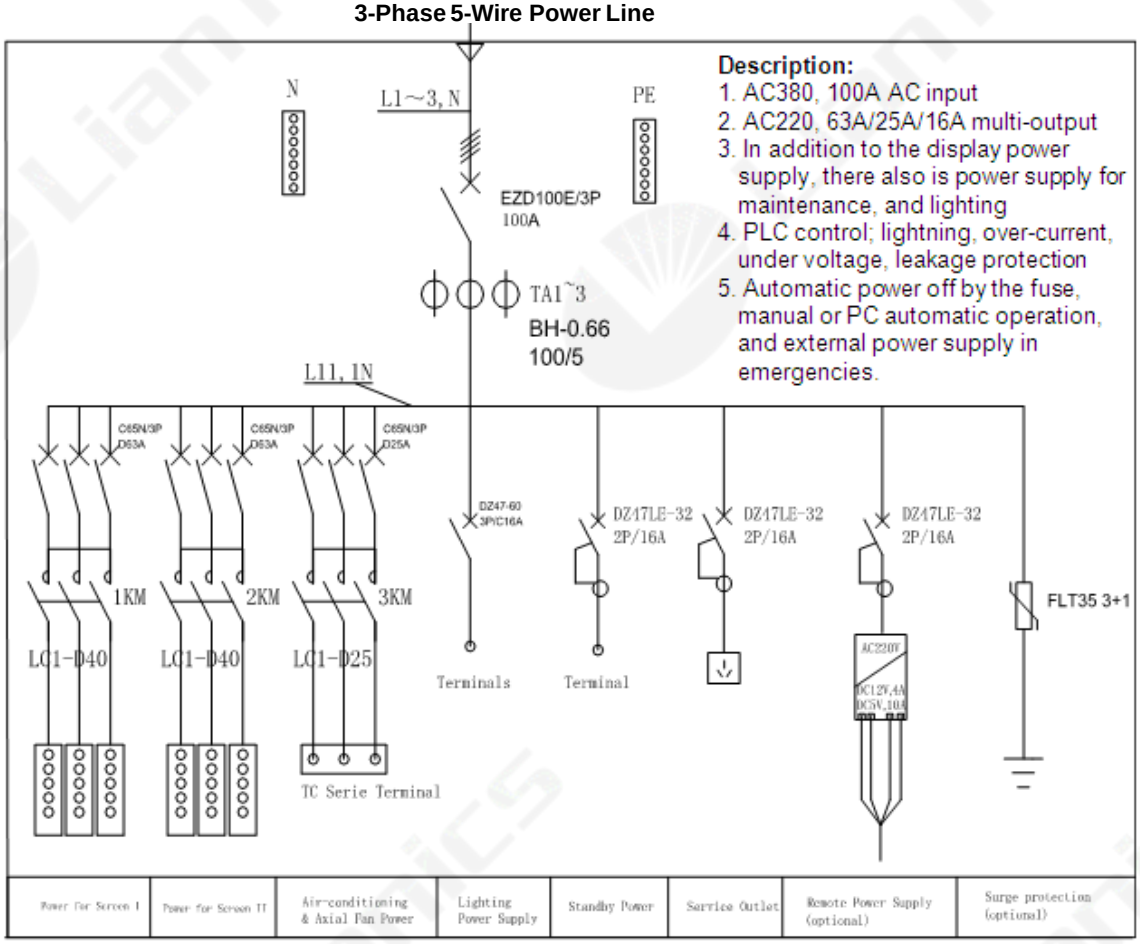


Image 3-20 Typical power supply system diagram

Selecting and layout of the power line

- LED display is supplied with AC220V power with good grounding and requires that the grid voltage fluctuation is less than 10%.
- Determine the diameter of the power cord according to the power of the display (Unit: mm^2, the cross-sectional area of the power cord).
- Power lines: set aside 5-10m between the power distribution box and the display. Cable: set aside 5-10m between the control room and the display.

The power supply has three-wire system (live, neutral and earth) or five-wire system (3 live wires, neutral and earth). When the maximum power consumption of the LED large-display is less than 10 KW, generally use single-phase three-wire power supply , and vice versa use the three-phase five-wire power supply.

4. SETUP PROCESS

This chapter describes the process of suspended installation and standing installation of C25 LED display.

Warning: Safety first. Fence off the installation area before starting to install. Ensure you read, understand and follow the safety instructions mentioned in the chapter “Safety” of this installation manual. Furthermore, make sure that all the installation requirements are fulfilled.

The truss beam and level system used in this chapter are pure instructive, and assumes the truss beam and level system have been installed and answers to the flatness requirements. The customer is free to install his own truss beam and level system according to his own wishes but answering to the mechanical requirements mentioned in this installation manual.

4.1 Installation Preparation

Package Check

•Product Item Number —— Confirmed
•Package —— Perfect
•Complete Screen Appearance —— No Scrape

Cabinet Off-line Test

C25 cabinet supports off-line test. Users can test each C25 cabinet without connecting with LED control system. The test steps are as below:

1.Make sure that the receiving cards are connected with each of the LED modules but not connected with CAT5 data cable.

2.Turn on the LED screen, the tiles show nothing.

3.Press the black switch on the receiver card seven times. Then the display contents on the LED tile will be changed to Diagonal, Grey, Red, Green, Blue, White and Black in order.

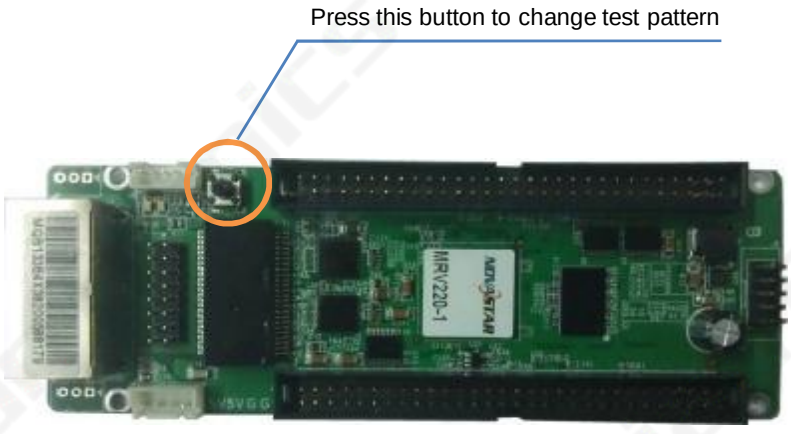


Image 4-1 Off-line Test button on receiver card

Installation Preparation

Good viewing angle and good sight for the surroundings

- Favorable ventilation conditions
- Safe and stable rating input voltage
- Suitable size, firm and stable installation table-board
- Rear maintenance space is more than 800mm from front to back.

Tools list for installation (choice depends on the practical jobsite)

1. Diagonal cutting plier Cut the wire	**2. Combination plier** Cut the steel wire rope	**3. Screw drivers** Install tiles and power supply
4. L shape spanners Tighten or loosen the screw	**5. End wrench tool set** Tighten or loosen the screw	**6. Adjustable wrench** Install tiles
7. Socket wrench Assemble the screen	**8. Digital multi-meter** Measure voltage or current	**9. Rubber hammer** Adjust the gap between tiles

Other tools for installation (choice depends on the practical jobsite)

Tools	Quantity	Function
Electric drill	1pc	Drill holes on the wall or frame
Rivet drill	1pc	Fix the cabinet in place
Electric adhesive plaster	Several	Isolate electricity after wire connected
Tape measure	1pc	
High-brightness flashlight	1pc	Used in the dark area
Safety rope	Ref.	Personal safety, very important
220V power outlet board	1pc	Power supply
Level & vertical ruler	1pc	Test the level of the frame

4.2 Setup Process of Standing Installation

Warning: The height of the C25 display depends on the height of the supporting steel structure and the display surface has to obtain the flatness within a tolerance zone of +/- 0.2mm and keep perpendicular to the reference surface.

Setup Process

1. Assemble four C25 tiles to be the center tiles of the whole display and level them out using a bubble level.

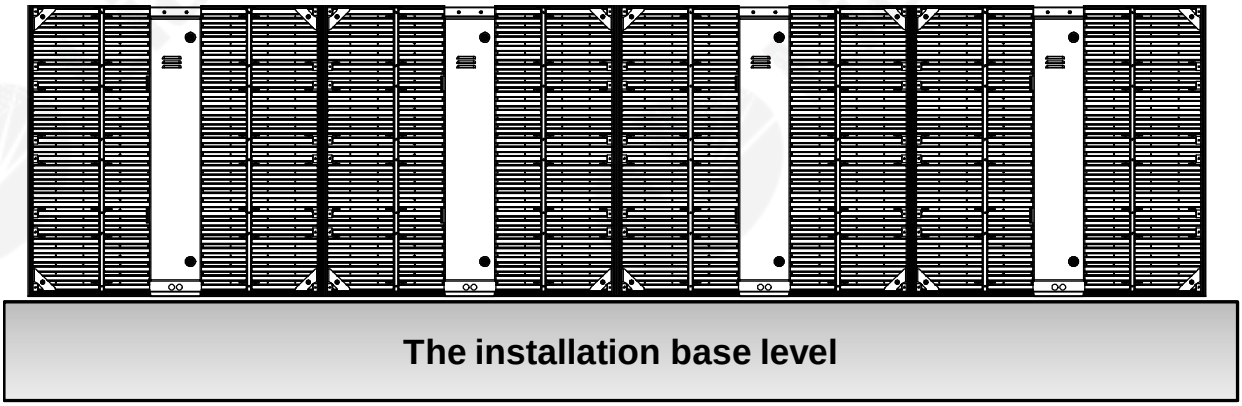


Image 4-2 Four C25 tiles are installed in the horizontal line

2. Assemble the C25 tiles at the center in the second row. Fix the corners of adjacent tiles with connecting plates and corresponding screws, and make appropriate adjustments if necessary to ensure the smooth and seamless surface of the C25 display.

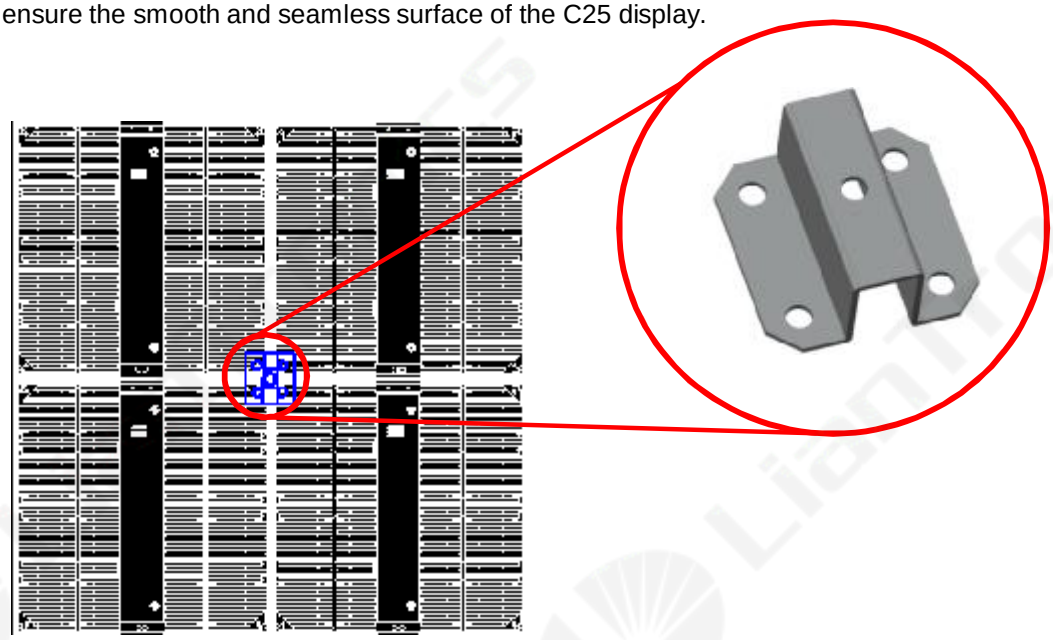


Image4-3 Assemble the C25 tile in the center of the second line

3. Continue to assemble the other C25 tiles at the second row from center to double sides. The corners of every two tiles at the bottom are fixed with special connecting plates. Fix the connecting plates to the supporting steel structure at the back of the display. (See the steel structure design and installation image for more details.)

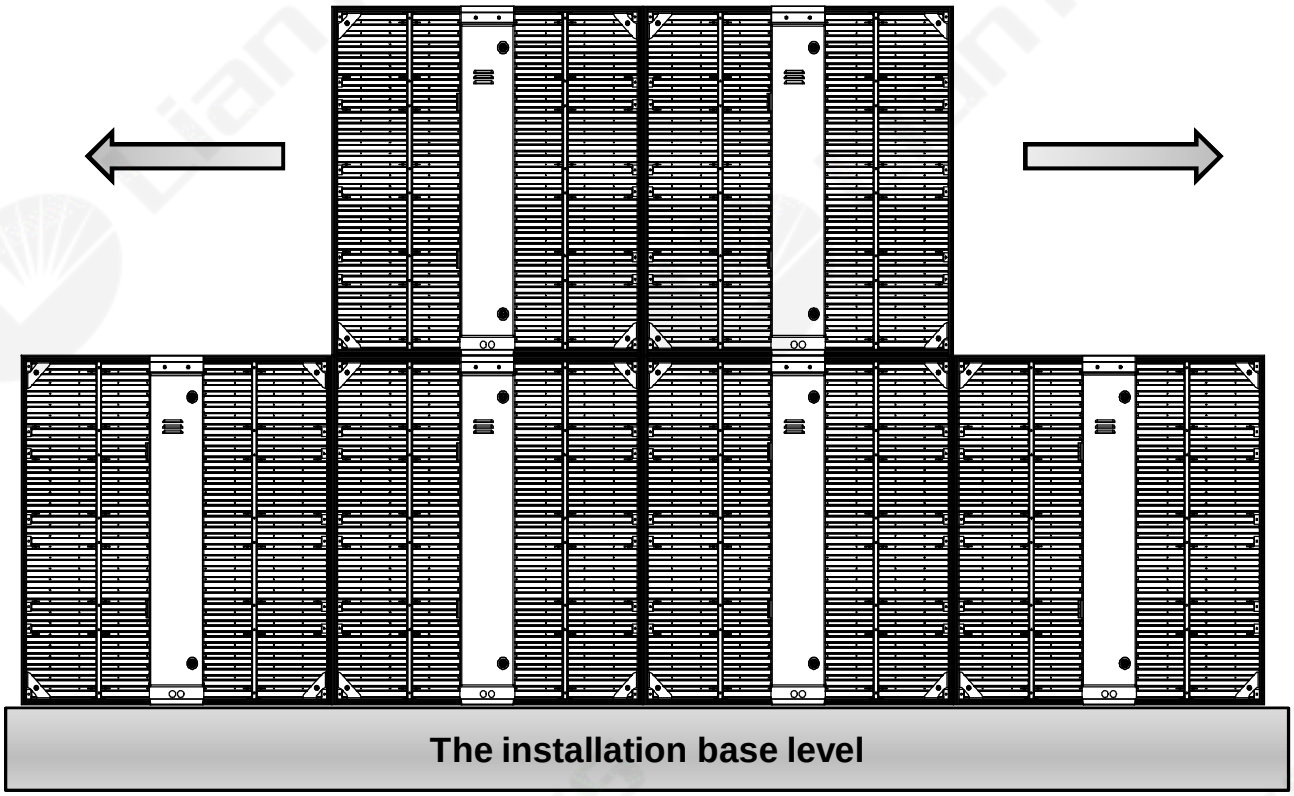


Image 4-4 Assemble the C25 tile from center to double sides

4. Continue to assemble the C25 display tiles from down to up row after row. Connect the tiles one by one.

Caution: Before assembling the next tile, make sure the whole display smooth and seamless.

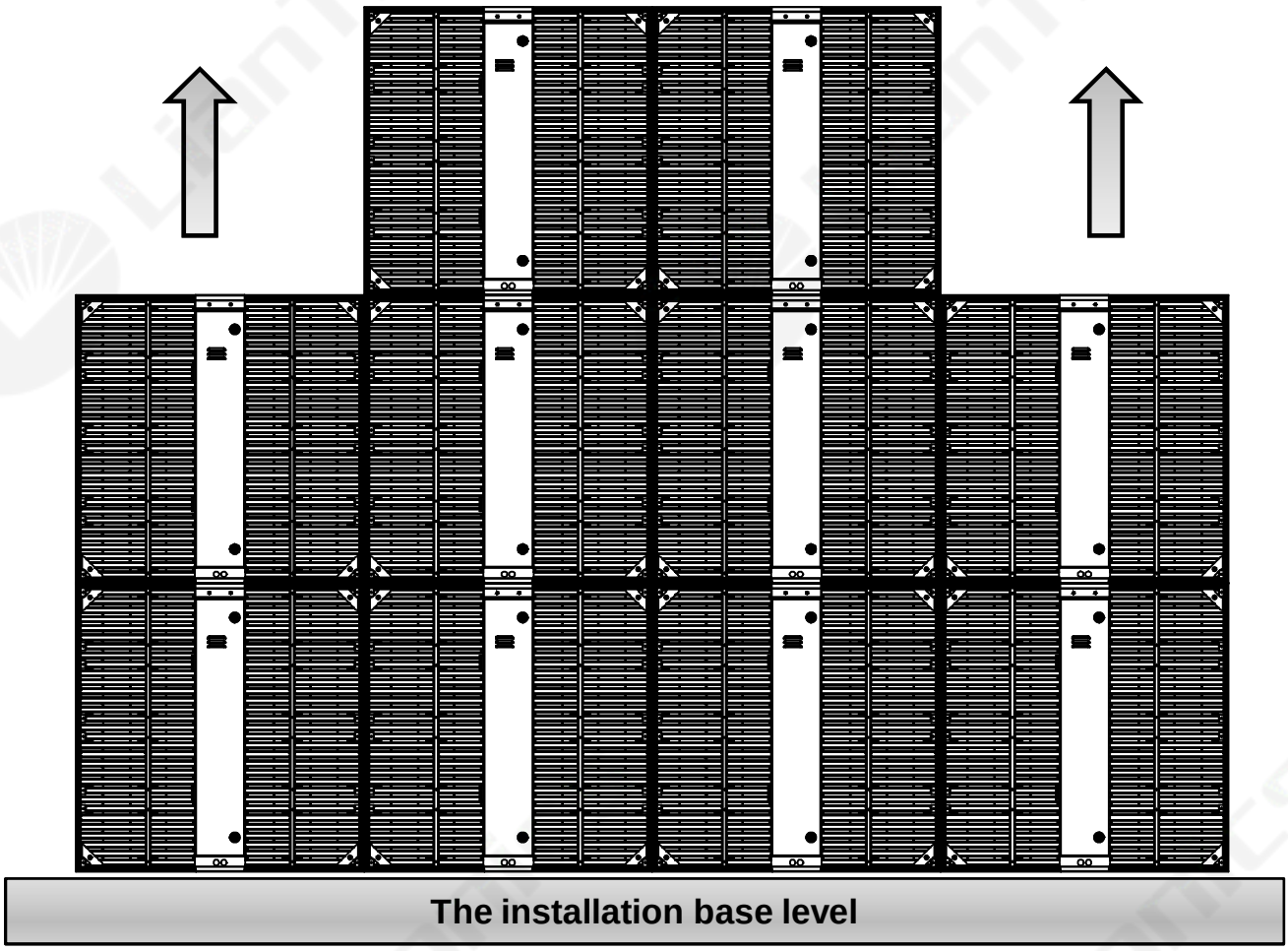


Image 4-5 Increase the tiles from down to up

5. Fix all the corners of the C25 tiles at the bottom and flanks with connecting plates. Fix the connecting plates to the supporting steel structure at the back of the display. (See the steel structure design and installation image for more details.)

Image 4-6 Example of stacked installation 5X4 tiles

4.3 Data and power Cabling

Connect power cable and signal cable as below :for it's design, power cable should be connected line by line, factory original main power cable is 2.5mm^2,for safe use ,each cable limited to connected 10 tiles. Signal cable connect from the first tile still to the last one, link all tiles as "Z" or "N".

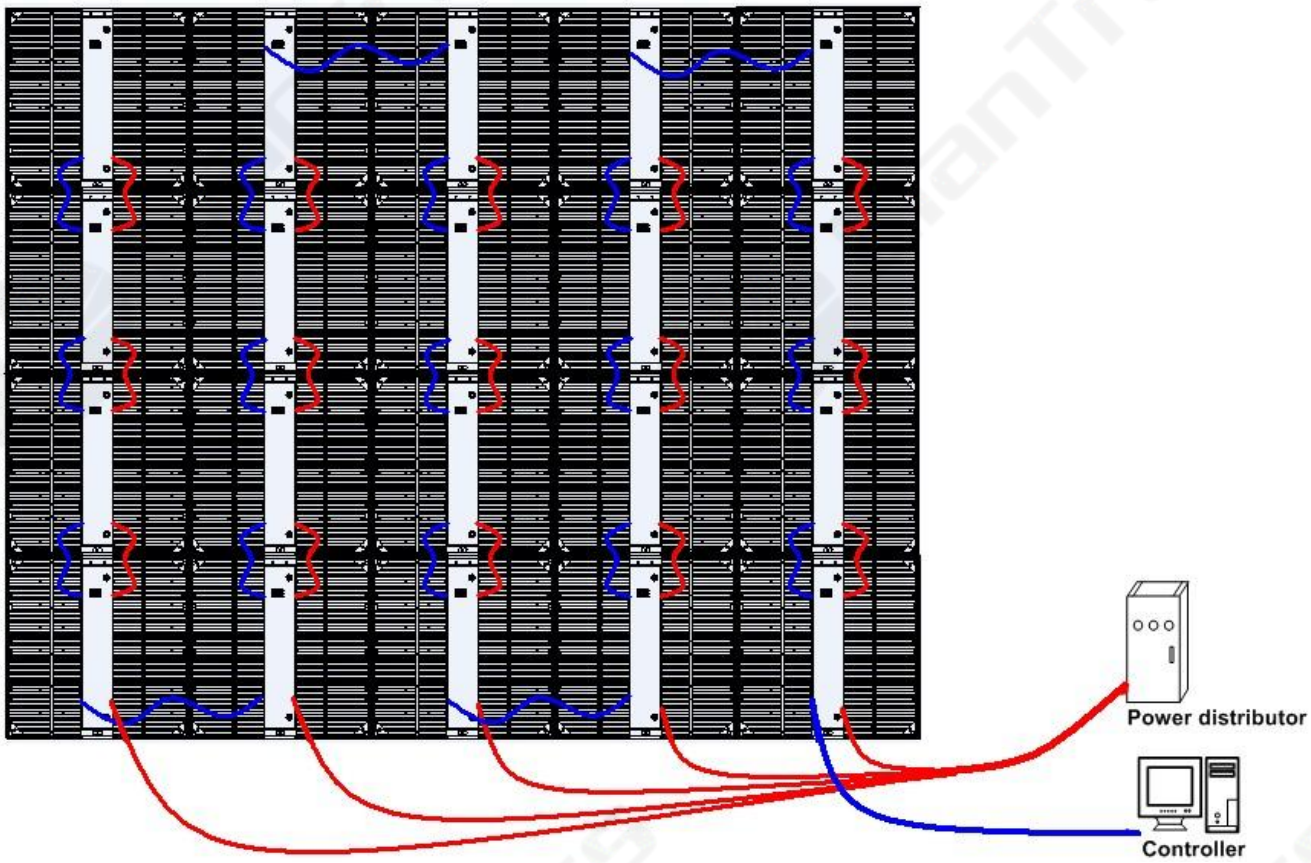


Image 4-7 power and data cabling (rear view)

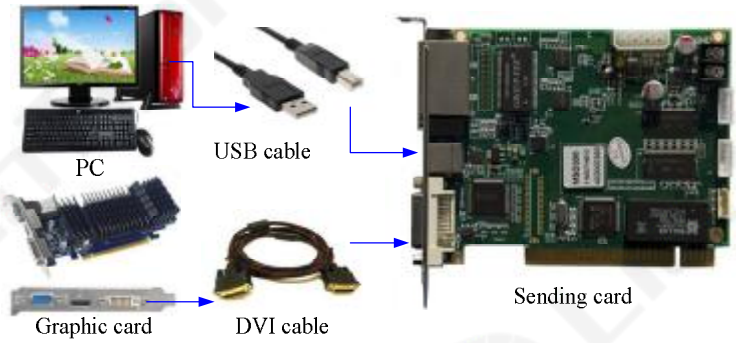


Image 4-8 Controller details

Warning: Please pay attention to the connection from image 4-11,which will be as the reference of the latter software screen connection configuration

5. START-UP OF THE SYSTEM

5.1 Software Installation

1. Please put the LED system installation CD into the CD-ROM. Then you can find the Nova LED studio control software and the installation program in the CD-ROM folder.
2. Double click

to start LED control software installation.
3. Follow the installation instruction till to the installation procedure finished.

5.2 System Operation

First, power on the control system computer, and then switch on the power of LED display. Now following the procedures and instructions below :

1. Start Nova LCT control software

If you have installed the **"Nova LCT control software"**, there will be a Nova LCT Mars icon on the desktop. Please click the icon (image 5-1) twice to open the Nova LCT Mars control software, and the computer will enter the interface as image 5-2. Below the **"Local system info"** of the interface, if it shows **"Control System: 0"**, that means the USB serial port connection is not good. If it shows **"Control System: 1"**, that means the connection is good and you can continue the configuration. If there is no image on the screen, please check the DVI cable, or check the display mode on your computer. The display mode must be clone (copy) mode.

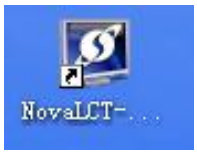


Image 5-1

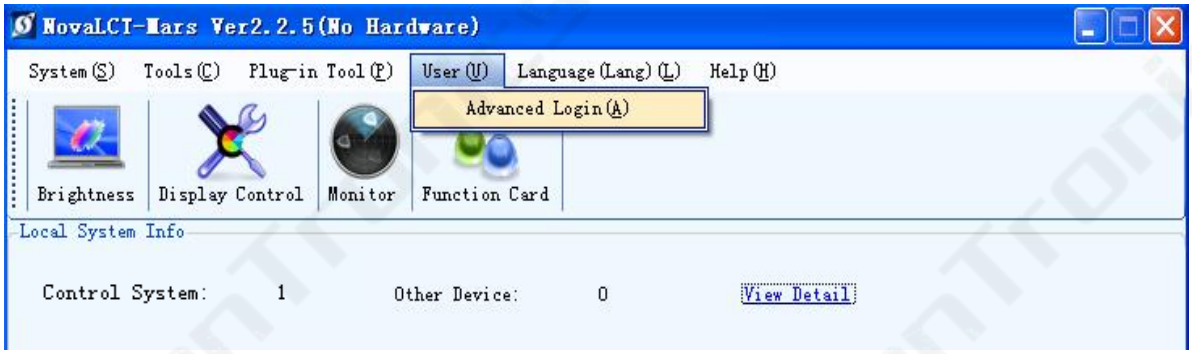


Image 5-2

2. User Login

User login—This menu is for user to login. You can do this when you want to activate Smart Wizard to configure the control system performance and data flow modes. If all the cable connection has been finished, please turn on computer and switch on the power of the screen, and then check the signal on the transmitter card and the receiver card. For each card, there are two indicators; you must make sure that the red indicator stays on while the green indicator is blinking, and then you can open the Nova LCT Mars. Click the **"User"**, click **"Advanced Log-in"**, and type in the password"666" like image 5-3, After you log in and enter the setting interface, click **"Screen Config"** and the dialog box of **"Current Serial Port"** appears as Image5-4.

The navigation menu for user is as follows:

Image 5-3 Software operation for users to login

Image 5-4 Software operation for users to download the *.scfg or *.rcfg

Note: If the pull-down menu in the above dialog box does not show **"Current Serial Port"**, please check the USB wire and check whether you have installed the serial port driver or not. If it is ok, there will be two options on this interface. Select **"Load Configure File"**, and you can load the **"*.scfg"** file from the CD that our company has given you. This file is the configuration file of receiving cards. Before shipment, all of the file has been saved on the receiving cards, so you don't need to load them only if the data has lost.

Shown as image 5-4, you can select **"Load Config File"**, and click **"Browse"** to find the **"*.scfg"** file, or you can select **"Configure Screen"** and click **"Next"**, and then **"Screen Configure"** interface comes out like image 5-5. On this interface, you will see three menus, and they are **"Sending Board, Scan Board, Screen Configuration"**. You can down load the **"*.rcfg"** file in image 5-5 and download the **"*scr"** file in image 5-6.

You must make sure that the sending board number and the port number match with the hardware and the port you connected.

Image 5-5 Software operation for users to configure the scan board

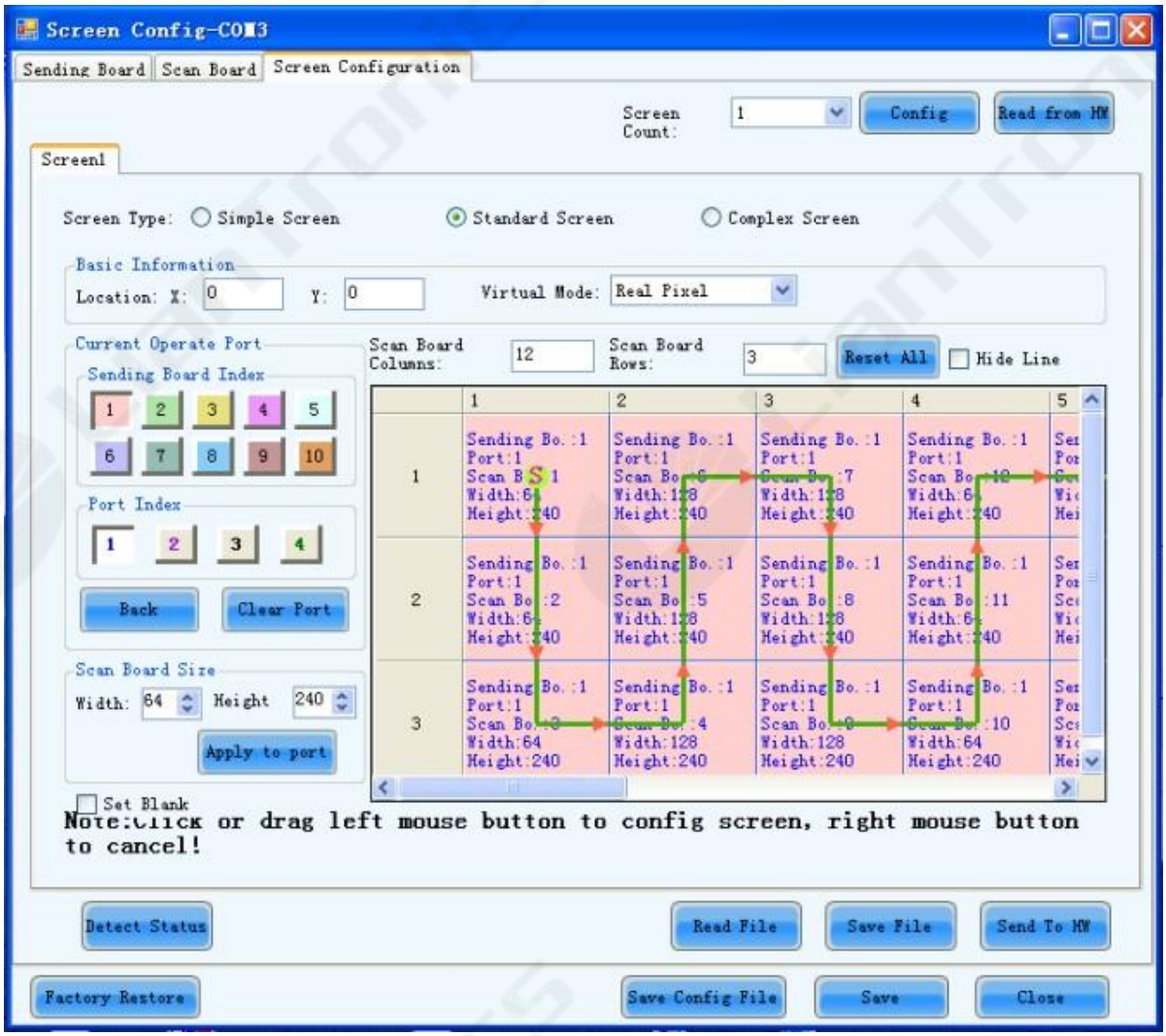


Image 5-6 Software operation for users to configure the screen

6. TROUBLE SHOOTING

6.1 Software Trouble

Problem type	Problem description	Solution	Reason	Analysis
Nova LCT	Unable to open NovaLCT	Replace LCT software	Software problem	
	System notice: NovaLCT.exe-error	Install Microsoft .NET Framework 2.0	Computer is not installed with .NET Framework software	1.Computer is not installed with .NET Framework 2. Already installed, but may be damaged
	LCT system connection fails	Check the RS-232 connection and communication	The RS-232 communication is not connected or not get through	
		Replace LCT	LCT communication is not stable	Nova LCT version may be changed, confirm that you use the right version.
	display brightness is not uniform	Set values of R, G, B brightness on the all controllers as the same	Controller's R,G,B brightness values are not the same	1. Brightness values not the same. 2. Data is not saved successfully after setting.
		The calibration mode of controllers did not set to “On”.	The brightness is different before and after calibration	1. Calibration mode is not “On”. 2.All the calibration modes are “On”, but not successfully saved after setting
		Change the brightness adjusting mode	Brightness adjusting modes are different between different controllers	1. Brightness adjusting modes are not set as the same 2.The setting is not saved successfully
		Check Gamma value of different controllers and resend the database	Gamma values are different for different controllers	
		If brightness adjusting is in auto modes and controlled by sensor, new update need to wait for 30 seconds	Brightness sensor action need to wait for 30 seconds.	
	LCT software monitor shows wrong status	Change and re-install LCT software	Software problem	
	One area of receiver card is black	Check the row and column setting in LCT	Map setting in the LCT is wrong	
Nova Studio	The whole display is black	Close the play time schedule	Time schedule setting is wrong	
		Check the media source	Media source is lost or stopped	

6.2 System Hardware Trouble

Problem type	Problem description	Solution	Reason	Analysis
Controller	Black screen	No DVI signal output from the graphics card in PC	No DVI signal to the controller	
		Check the power of the controller	No power for the controller	
		Re-start the controller		
Divider	Divider driving area is black	Check **RUN** status on the divider. If it blinks 2 seconds once, it means no data from the fiber cable.	There is no data from the controller or the fiber cable is not well connected	Divider is working when **RUN** lamp blinks 2 times per second. The lamp blinking 2 seconds per time means no data is output from controller or the fiber is broken
		Check the power of the divider	No power for the divider	
Receiver card	Receiver card problem causes black display on single tile	Check data input from upper receiver card(**RUN** lamp blinks 2 times per second). If the data in is ok but problem still exists, replace the receiver card	Hardware problem	
		If there is no data input from the cat5, check the cat5 connection or no data output from the upper receiver card	Poor Cat5 connection or output data problem of the upper receiver card	
	One row of the module in the tile is black or messed up	Check the hub card connection with the scan card, or the ribbon cable connection between the hub card and module. If connection is no problem, replace the hub card	Connection problem or hardware problem	

6.3 Module Problems

Problem type	Problem description	Reason	Solution
LED lamp	Blind lamps	The lamp is dead or soldering is not good	Replace the module
LED pixel	The pixel is black or loses color	The driving IC/resistor is bad soldered or out of work	Replace the module
LED module	One or several whole LED modules in the same row are black or defective	Cable is not connected or not well connected	Check the ribbon cable and power cable connection on the module

6.4 Power Problems

Problem type	Problem description	Reason	Solution
Tile power	The whole tile is black	Power to the tile is not good or the breaker is turned off	Check power connection with the tile and the breaker in the tile
Power supply	The whole tile is black	The power supply feeding the receiver card is defective	Replace the defective power supply
Power supply	Several nearby module areas are black	The power supply feeding the module area is defective	Replace the defective power supply

6.5 Data Transfer Problems

Problem type	Problem description	Reason	Solution
Fiber	The display is black	The fiber cable is broken or the data I/O order is wrong	Check the fiber connection and the data I/O order
Cat 5	The whole column of the display is black	The connection is not good or the cat5 is defective	Check the data connection between the divider and the first scan card
Cat 5	One or several tiles in column are black	The connection is not good or the cat5 is defective	Check the cat5 connection between the tiles
Cat 5	All the display lights up but the columns are not in right order	The connection order is wrong	Check and correct the Cat5 connection order in the divider

7 MAINTENANCE

Routine maintenance

1. Make sure the LED display is well ventilated, dry and running in suitable temperature.
2. Regularly check the internal cables inside the LED display are in stable connection, the power supplies are working well, the ground wires are connected well, and the lightning arrester is running well.
3. Regularly wipe the dust on the surface of the LED tile with a soft cloth, and keep the LED display surface clean to avoid brightness differences between clean and unclean LED tiles.

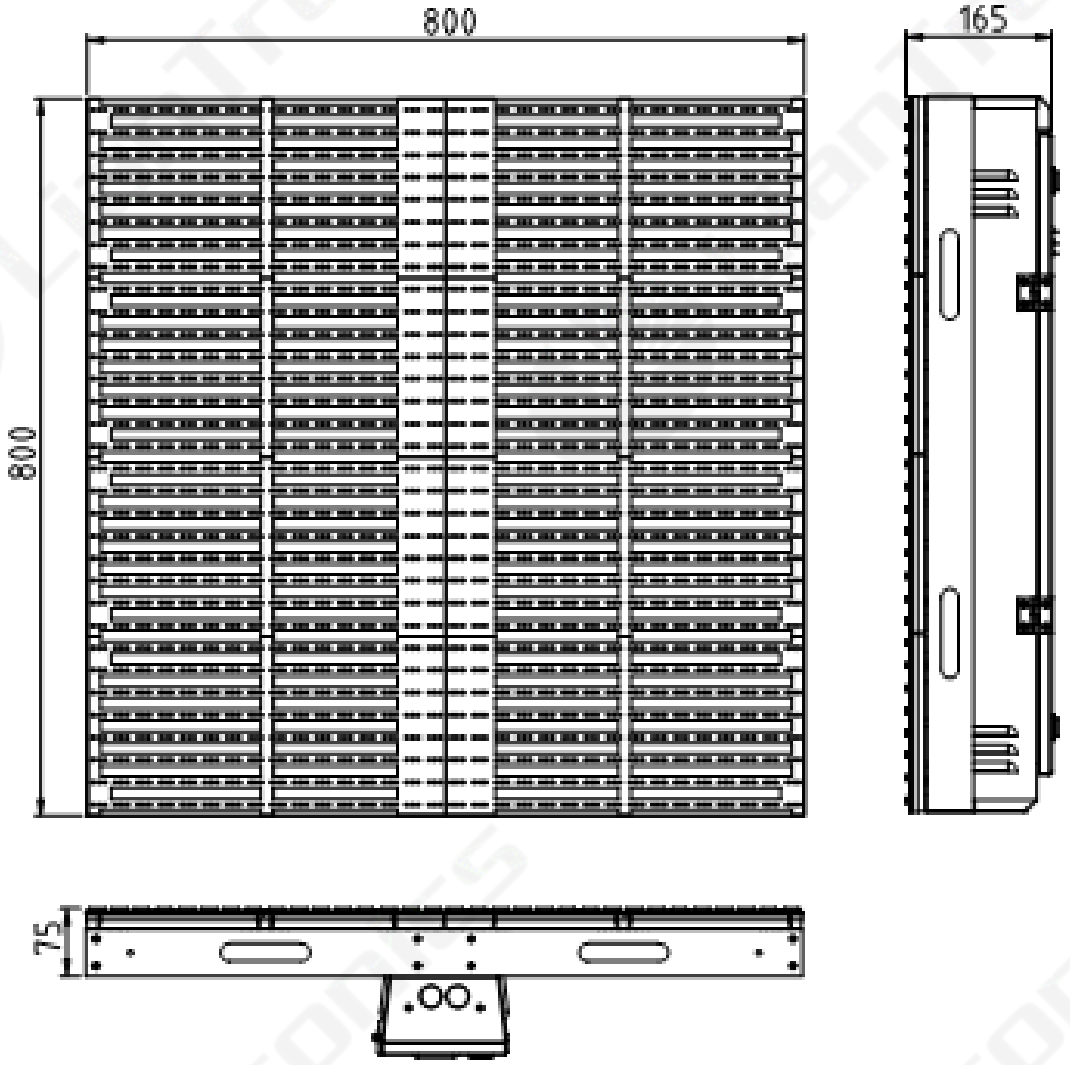
Cautions for use

1. Before power on the LED display, start your computer first, and then turn on the power of LED display.
2. Before turn off the display system, first turn off the power of LED display, and then turn off the computer.
3. When you are editing video playlist, you had better to keep the LED display closed.
4. When failure appears, first turn off the power of LED display, then contact with service department of LIANTRONICS for technical support.

Appendix A: Technical Specification

Item	C25 (indoor)
Pixel pitch (mm)	25
Scan mode	Static
Pixel configuration	1R1G1B
LED type	DIP
Brightness (nit)	≥6000
Viewing angle	H:120°; V:50°
Pixel density (pixel/m²)	1600
Module (mm)	400x200
Module resolution (pixel)	16x8
Tile size (mm)	800x800x165
Tile resolution (pixel)	32x32
Tile type and material	Aluminum
Transparent rate(%)	40
Tile weight (Kg)	14.5
Average power consumption (W/m²)	175
Max power consumption (W/m²)	525
Refresh rate(Hz)	1920
Frame rate(Hz)	60
Drive IC	16 channel constant current driving IC
processing	14 bit/color
DC voltage (V)	4.2
Serviceability	back
Protection grade	Front: IP65; back: IP54
Operation/storage temperature and humidity	Operation temperature: -20℃~+40℃; Operation humidity : 10~90%RH Storage temperature: -40℃~+60℃; Storage humidity : 10~90%RH
Life span (hrs)	≥50000（@70% brightness）
MTBF (hrs)	≥3000
Source compatibility	CVBS,YC,YUV,RGB,DVI,SDI,HD-SDI

Appendix B: Tile Dimensions



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